# ABSTRACT

**TITLE OF ABSTRACT:** RAPID DIAGNOSIS OF TUBERCULOUS MENINGITIS: EVALUATION OF A MODIFIED ZEIHL-NEELSEN STAINING TECHNIQUE FOR DEMONSTRATING MYCOBACTERIUM TUBERCULOSIS.

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**OBJECTIVE:** Rapid diagnosis of tuberculous meningitis (TBM) is crucial for prompt initiation of treatment. We are evaluating the diagnostic accuracy of modified Zeihl-Neelsen stain a newer diagnostic tool for the diagnosis of TBM, using consensus uniform research case definition criteria as reference standard.

**METHODS:** Patient with a clinical diagnosis of TBM admitted in Christian Medical College Vellore, India, were prospectively enrolled from February 2017 till July 2018. Cerebrospinal fluid (CSF) samples of the patients were evaluated using the modified Zeihl-Neelsen technique, auramine-rhodamine stain, Xpert MTB/RIF, MGIT, biochemical tests along with clinical and radiological assessment.

**RESULTS:** Among the eighty-one patients, 16 were classified as definite TBM, 27 as probable TBM, 19 as possible TBM and 19 as "not TBM," based on the consensus uniform research case definition criteria. Considering 'definite, probable and possible TBM' and 'no TBM', the MZN has a sensitivity of 4.8% (3/81) and a specificity of 100%, Xpert had a sensitivity of 16.6 % (8/48), auramine-rhodamine test had a sensitivity of 5.2% (3/58), MGIT had a sensitivity of 27.6% (13/47).

**CONCLUSION:** MZN confirms the diagnosis of TBM rapidly, however it has not added to the diagnostic yield. Need of cytospin machine would limit the possibility of replacing auramine-rhodamine test. Further rapid diagnostic test with good diagnostic accuracy should be developed.

**KEYWORDS:** tuberculosis meningitis, TBM, Modified Ziehl-Neelsen stain, MZN, Xpert MTB/RIF, MGIT.